

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 8.2312601 ID: B-3865 COUNTY: Johnston

DESCRIPTION(1): Bridge No. 212 over Little River on SR 1002

INFORMATION ON EXISTING BRIDGES Information obtained from: field inspection
 microfilm(Reel: _____ Pos: _____)
 other _____

COUNTY BRIDGE NO. 212 BRIDGE LENGTH 225 ft NO. BENTS IN: CHANNEL 3 FLOOD PLAIN 6

FOUNDATION TYPE: Assumed spread footings

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: No evidence of scour

INTERIOR BENTS: Deep scour pockets at Bent 1 location of existing bridge approximately 1 to 2 feet deep and 3 to 4 feet in diameter around footings

CHANNEL BED: Minor scour pockets

CHANNEL BANKS: Minor scouring along banks, some tree roots exposed

EXISTING SCOUR PROTECTION:

TYPE(3): Concrete wingwall, rip-rap

EXTENT(4): To the limits of embankment

EFFECTIVENESS(5): Good

OBSTRUCTIONS(6) (DAMS,DEBRIS,ETC.): Flood debris trapped at existing Bent 2 and 3 locations, remains from a previous bridge underneath existing bridge at Bent 2 and End Bent 1 locations, abandoned wooden piles underwater at proposed brige location

DESIGN INFORMATION

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): Fine to coarse sand and gravel (A-1-b)

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): Fine to coarse sandy silt (A-4) and fine to coarse sandy clay (A-6)

FOUNDATION BEARING MATERIAL(9): NCR-Felsic Metavolcanic Rock

CHANNEL BANK COVER(10): Grasses, shrubs and trees

FLOOD PLAIN WIDTH(11): 900± ft

FLOOD PLAIN COVER(12): Grasses, shrubs and trees

DESIGN INFORMATION CONT.

STREAM IS DEGRADING AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS: _____

CHANNEL MIGRATION TENDENCY (14): South

REPORTED BY: Beth H. Nowen DATE: 7/30/2003
 Froehling & Robertson, Inc.

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (15): _____

	B1-A	B1-B	B2-A	B2-B	B3-A	B3-B
100-year	100.23	100.23	94.98	94.82	95.45	95.3
500-year	99.98	99.98	94.9	94.76	95.45	95.3

REPORTED BY: Bobby D. Work DATE: 8-21-03
 NCDOT GEOTECHNICAL UNIT

INSTRUCTIONS

- (1) GIVE THE DESCRIPTION OF THE SPECIFIC SITE GIVING ROUTE NUMBER AND BODY OF WATER CROSSED.
- (2) NOTE ANY EVIDENCE OF SCOUR AT THE EXISTING END BENTS OR ABUTMENTS (UNDERMINING, SLOUGHING, SCOUR LOCATIONS, DEGRADATIONS, ETC.)
- (3) NOTE ANY EXISTING SCOUR PROTECTION (RIP RAP, ETC.)
- (4) DESCRIBE THE EXTENT OF ANY EXISTING SCOUR PROTECTION.
- (5) DESCRIBE WHETHER OR NOT THE SCOUR PROTECTION APPEARS TO BE WORKING.
- (6) NOTE ANY DAMS, FALLEN TREES, DEBRIS AT BENTS, ETC.
- (7) DESCRIBE THE CHANNEL BED MATERIAL: A SAMPLE SHOULD BE TAKEN FOR GRAIN SIZE DISTRIBUTION, ATTACH LAB RESULTS.
- (8) DESCRIBE THE CHANNEL BANK MATERIAL: A SAMPLE SHOULD BE TAKEN FOR GRAIN SIZE DISTRIBUTION, ATTACH LAB RESULTS.
- (9) DESCRIBE THE FOUNDATION BEARING MATERIAL,
- (10) DESCRIBE THE BANK COVERING (GRASS, TREES, RIP RAP, NONE, ETC.)
- (11) GIVE THE APPROXIMATE FLOOD PLAIN WIDTH (ESTIMATE).
- (12) DESCRIBE THE FLOOD PLAIN COVERING (GRASS, TREES, CROPS, ETC.)
- (13) CHECK THE APPROPRIATE SPACE AS TO WHETHER THE STREAM IS DEGRADING OR AGGRADING
- (14) DESCRIBE THE POTENTIAL OF THE BODY OF WATER TO MIGRATE LATERALLY DURING THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS).
- (15) GIVE THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION EXPECTED OVER THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS). THIS CAN BE GIVEN AS AN ELEVATION RANGE ACROSS THE SITE, OR ON A BENT BY BENT BASIS WHERE VARIATIONS EXIST. DISCUSS RELATIONSHIP BETWEEN THE HYDRAULICS THEORETICAL SCOUR AND THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION. THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION IS BASED ON THE ERODABILITY OF MATERIALS WITH CONSIDERATION FOR JOINTING, FOLIATION, BEDDING ORIENTATION AND FREQUENCY; CORE RECOVERY PERCENTAGE; PERCENTAGE RQD; DIFFERENTIAL WEATHERING, SHEAR STRENGTH; OBSERVATIONS AT EXISTING STRUCTURES; OTHER TESTS DEEMED APPROPRIATE; AND OVERALL GEOLOGIC CONDITIONS AT THE SITE.